

An Effective Routing Technique To Control Congestion In High Speed Networks

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Abstract:For managing the traffic, network controlling of congestion is one of helpful methods. Fuzzy logic control was considered for Intelligence control and has its applications in the direction of network congestion control. In previous phase, it was utilized to execute the rate control to improve the QoS. We introduce a system of distributed traffic management, where routers are organized by intelligent data rate controllers to undertake traffic mass. Our novel scheme of traffic management known as IntelRate controller was projected to handle Internet congestion to promise quality of service for various applications of service. Our novel system will consider several merits of the traditional protocols. Altered from various explicit protocols of control the traffic that have to assess network specifications to work out approved senders sending rate, This will determine router queue size; thus it avoid a variety of performance problems that occurs from parameter assessment while reduction of much utilization of memory resources within routers.

Keywords: Fuzzy logic control, Traffic management, IntelRate controller, Congestion, Memory resource, Intelligence control.

1. INTRODUCTION:

Transmission control protocol Reno is an extensively organized protocol of congestion control that handles the traffic of Internet. As an implicit control procedure, Transmission control protocol will encounter a variety of problems regarding performance when Internet product of bandwidth-delay will continue to enhance [1]. There are a number of explicit protocols that

will work out sending rates on the basis of their queue size, but actually they will assess active flows within a router, and this consumes resources of memory. From viewpoint of service management, some of methods of congestion control contain quality of service problems in that they cannot assure assured level of performance in a number of situations because of design problems.

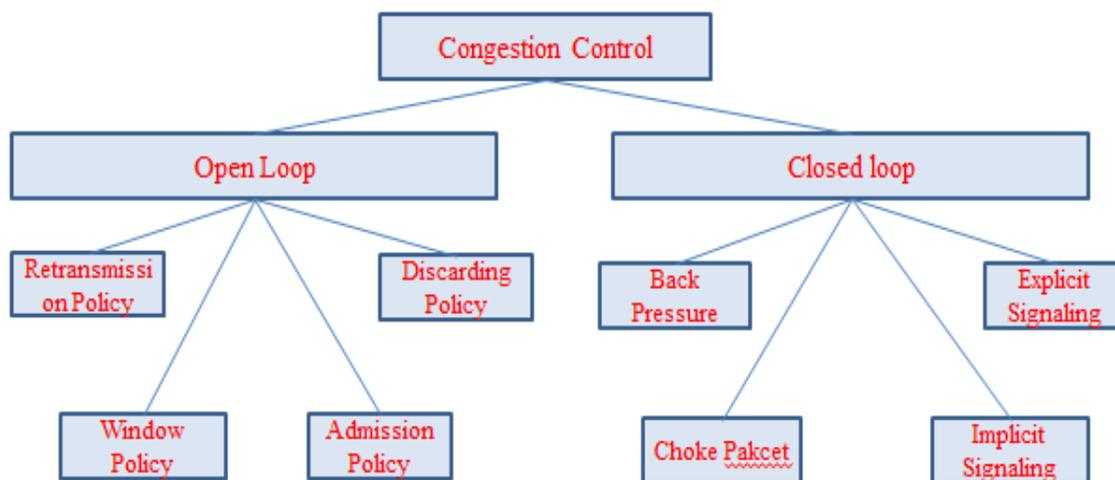


Fig 1: Congestion Control types

There are various methods for improvisation of quality of service. Fuzzy logic control is used for designing of robust systems that challenge with undesirable synthesizing factors. Logic theory of Fuzzy offers a well-situated for design controller related human decision making, and advice to form difficult non-definite system. Logic control of Fuzzy was functional in process

control of industrial and explains performance of mature control in accurateness, strength as well as stability. Our work will put forward a system of distributed traffic management, where routers are organized by controlling the intelligent data rate is to undertake traffic mass [2][3]. IntelRate controller was projected to handle Internet congestion to promise quality of service for various applications

of service. It is considered by means of considering disadvantages in addition to advantages of traditional protocols of congestion control.

2. METHODOLOGY

Logic control of Fuzzy has several applications in the direction of congestion control in network and in early stage, was utilized to execute rate control to assure QoS. These algorithms are exploiting in Character, and lies on complete queue length to regulate allocated sending rate. These designs have a variety of shortcomings including fluctuations of queue size, stability as well as low employment. Logic control of Fuzzy was used in arbitrary early detection algorithm to decrease packet loss rate and get better usage. It is used for designing of robust systems that challenge with undesirable synthesizing factors. They provide implicit or else inaccurate congestion signalling, and consequently cannot triumph over throughput fluctuations. We design a scheme of distributed traffic management intended for modern networks of Internet protocol, where routers are positioned by explicit rate basis congestion controllers. Novel scheme of traffic management was projected to handle Internet congestion to promise quality of service for various applications of service. Different from explicit protocols of traffic control that suffer from performance problems because of assessment of network parameters our novel system will overcome fundamental deficiencies. Our novel system is of two-Input single-output type which is the component of proposed fuzzy logic controller for managing network system traffic. There are several explicit protocols that will work out sending rates towards their queue size, but actually they will assess active flows within a router, and this consumes resources of memory. We put together merits of traditional protocols to get better existing explicit protocols of traffic congestion control and structures proactive method that is based on several practical designs so that unnecessary resource expenditure within routers because of estimating network parameters can be overcome thus a fuzzy logic controller is relatively striking due to its ability. We suggest a system of distributed traffic management, where routers are organized by intelligent data rate controllers to undertake traffic mass [4]. Our fuzzy-logic-based controller will determine queue size of router thus avoiding a variety of performance problems that occurs from parameter assessment while reduction of much utilization of memory resources within routers. For managing the implementation easy, such as Transmission control protocol, novel controller will consider network as black box so that queue size is just parameter it depends on to alter source sending rate. Implementation of queue size as distinctive

congestion signals motivated by designs of some earlier controllers so that queue size is measured precisely and competent to signal commencement of network congestion. The controller will maintain merits of traditional rate controllers by means of provision of explicit multi-bit congestion information devoid of keeping per-flow state information. We depend on fuzzy logic theory for designing our controller to structure a procedure of traffic management. OPNET modeller was employed for verification of efficiency and advantage of our proposal.

3. AN OVERVIEW OF PROPOSED SYSTEM

We have to develop an external rate-dependent system of traffic management for speedy internet protocol networks by means of using logic theory. The application of logic controller of fuzzy by means of less resultant parameters while offering improved results than existing method are the contributions of our work. Considering the rapid growth of Internet traffic our work will put forward a system of distributed traffic management, where routers are organized by intelligent data rate controllers to undertake traffic mass. Different from other explicit protocols of traffic control that should assess network parameters to work out approved source sending rate, our fuzzy-logic-based controller will determine router queue size; thus it avoids a variety of performance problems that occurs from parameter assessment while reduction of much utilization of memory resources within routers. We put up merits of traditional protocols to get better existing explicit protocols of traffic congestion control. As network parameter, queue size will be monitored and employed to proactively make a decision if action has to be taken to control source sending rate, consequently enhancing flexibility of network to traffic congestion. Fuzzy logic control is employed for designing of robust systems that challenge with undesirable synthesizing factors. IntelRate is controller of Two-Input single-output type which is the component of our proposed fuzzy logic controller for managing of the traffic in network system. Fuzzy logic controller is a non-linear mapping of inputs to outputs that includes four steps such as building of rule base, fuzzification, inference steps as well as defuzzification step [5]. Fuzzy logic control was useful in industrial process control and explains mature control performance in accurateness, strength as well as stability. For management of easy implementation such as Transmission control protocol, novel controller will consider network as black box so that queue size is just parameter it depends on to alter source sending rate. The controller will maintain merits of traditional rate

controllers by means of provision of explicit multi-bit congestion information devoid of keeping per-flow state information. We depend on fuzzy logic theory for designing our controller to structure a procedure of traffic management. Concepts of fuzzy set as well as logic of fuzzy logic control were introduced by Zadeh, and were extended from two-valued logic to constant interval by means of adding of intermediate values among absolute TRUE as well as FALSE.

Novel scheme of traffic management known as IntelRate controller was projected to handle Internet congestion to promise quality of service for various applications of service. The controller is considered by means of considering disadvantages

in addition to advantages of traditional protocols of congestion control. As distributed operation within networks, IntelRate controller makes use of instant queue size alone to efficiently throttle source sending rate by means of max-min fairness. Different from explicit protocols of traffic control that suffer from performance problems because of assessment of network parameters IntelRate controller will overcome fundamental deficiencies. For verification of effectiveness IntelRate controller, studies were conducted in OPNET modeller [6]. Besides feature of fuzzy logic control that tackle nonlinearity of traffic control systems, success of IntelRate controller is credited to alert design of fuzzy logic elements.

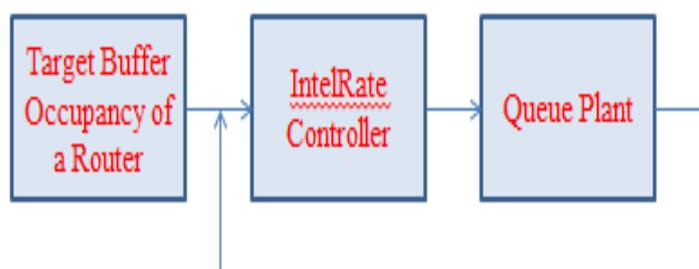


Fig1: An overview of IntelRate closed-loop system

In another way we can control the traffic in the network shows in figure 2, this figure shows physical deployment diagram for propose model. Here we will maintain traffic management systems and these traffic management systems were monitored by agent of flow agent pools. In flow agent pools we have number of agent that depends on size of the network that is Flow agent pool consists of a lot of flow agents which are deployed in servers of each network traffic management system. Here these pool agents will be responsible

for collecting information of traffic generated from several traffic management systems. The major work of Web server is to deploy web application which can communicate with users, responding to users' request and delivering the web pages to users. Meta Database Server is employed to store Hive database, to analysis results and other data elements that enable web application running. The whole process can be monitored by control management

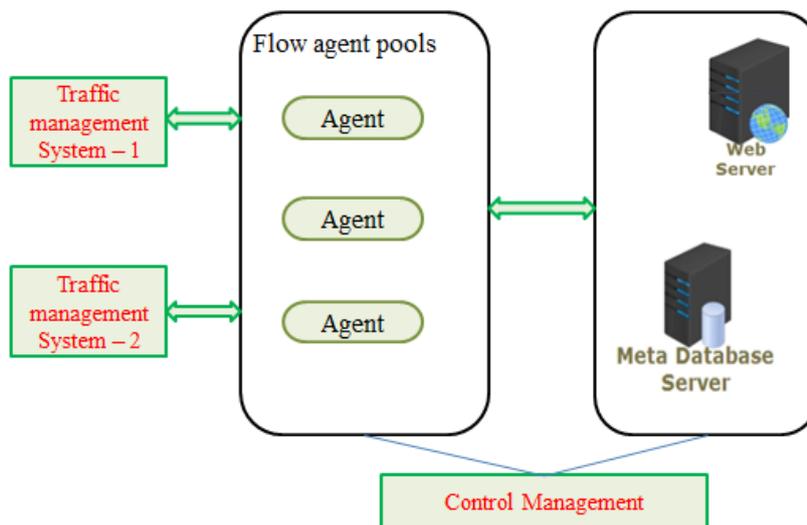


Fig 2: Deployment Diagram for Propose model

4. CONCLUSION

Fuzzy logic control was employed in random early detection algorithm to decrease packet loss rate and get better usage. They make available implicit or else inaccurate congestion signalling, and consequently cannot triumph over throughput fluctuations. Our work will suggest a system of distributed traffic management, where routers are organized by intelligent data rate controllers to undertake traffic mass by considering speedy growth of Internet traffic. Contrasting from other explicit protocols of traffic control that must assess network parameters to work out approved source sending rate, our fuzzy-logic-based controller will determine router queue size; thus it avoid a variety of performance problems that occurs from parameter assessment while reduction of much utilization of memory resources within routers. We introduce a novel scheme of traffic management was projected to handle Internet congestion to promise quality of service for various applications of service. This controller is considered by means of considering disadvantages in addition to advantages of traditional protocols of congestion control. Novel controller will consider network as black box so that queue size is just parameter it depends on to alter source sending rate. The controller will maintain merits of traditional rate controllers by means of provision of explicit multi-bit congestion information devoid of keeping per-flow state information. We mainly depend on fuzzy logic theory for designing our controller to structure a procedure of traffic management.

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